

Vikesh Mistry

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EDUCATION

University of Waterloo

2022 - 2027

B.A.Sc. Honours Mechanical Engineering (Junior)

GPA: 3.7

Relevant Courses: Material Science, Machine Dynamics, Vibrations, Mechanics of Deformable Solids, Thermodynamics

TECHNICAL SKILLS AND QUALIFICATIONS

Computer-Aided Design: SOLIDWORKS, GD&T, Solid Edge, Autodesk Fusion, AutoCAD, DFM, DOE, DFA

Finite Element Analysis: SOLIDWORKS Simulations, Ansys, Root Cause Analysis, CFD, Material Analysis

Manufacturing Skills: Welding, Tooling Design, Assembly Jigs, Lean Six Sigma, 3D Printing, Electrical Integration

WORK EXPERIENCE

Mechanical Design Engineer

Apr 2025 – Sept 2025

FuseRing, Welding Research

Toronto, ON

- Simulated nitrogen flow in a steel pipe using **SOLIDWORKS Simulations** to determine optimal flow rates for welding
- Documented simulation results and applied them to 3D print a design that shielded **over 50%** of the weld area
- Designed and built an inert gas welding chamber to prevent oxidation, improving joint quality by **80%**
- Machined all parts independently using a mill, lathe, bandsaw, and various other machine shop tools

Mechanical Railcar Designer

Sept 2024 – Dec 2024

National Steel Car, Process Engineering

Hamilton, ON

- Designed several **assembly** and **testing jigs** using **DFA** and **DFM** principles to optimize for high-volume production
- Conducted **FEA** to create elevated working platforms to support 15000lbs, verified with **engineering calculations**
- Spearheaded the start to end development and creation of 2 manufacturing stations to install **360 panels a day**
- Developed advanced tooling with **Solid Edge** for complex fabrication, reducing cycle time of each piece by **10%**

Mechanical Engineering Coop

Jan 2024 – Apr 2024

Liburdi Dimetrics, Weld Development Division

Hamilton, ON

- Modelled and drafted 10+ welding joints for **CANDU** nuclear and automotive applications with Solid Edge
- Conducted phased array ultrasonic & eddy current tests, collaborating with an NDT specialist to verify weld quality
- Analyzed **50+** welded test plates using macro examination to identify and diagnose defects with **material analysis**
- Researched **Orbital GMAW** to refine fixture design, minimizing defects and resolving issues from prior experiments

Mechanical Ride Technician Coop

Apr 2023 – Sept 2023

Kidsapia Indoor Amusement Park

Toronto, ON

- Identified failure risks in the mechanisms of **9+ rides**, and developed safety measures to quickly resolve issues
- Reduced machine downtime by **10%** by performing routine inspections diagnosing and resolving issues on the spot

PROJECT EXPERIENCE

Wind Turbine Design Team

Apr 2025

- Developed a **yaw limiting system** capable of restricting nacelle movement to under 8 degrees under full load
- Led the fabrication of the wooden base structure by designing unique brackets and **delegating** tasks to the team

Vehicle Dynamics Simulation

Jan 2025 – Apr 2025

- Designed and simulated a 2-DOF model with **MATLAB** to analyze vehicle handling using ODE numerical solvers
- Conducted stability testing with various speeds, steering inputs, and masses to assess the **oversteer/understeer**
- Optimized the vehicle's **mass distribution** to enhance the handling and performance in winter conditions

Autonomous Poker Dealing Robot

Apr 2023 – Sept 2023

- Developed a **worm-gear** driven base to rotate 270deg within 10sec and support 20lbs